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ARTICLE I.

MENTALITY AS CONNECTED WITH ORGANIZATION; OR, AS INFLUENCED AND INDICATED BY PHYSIOLOGICAL CONDITIONS. NO. V.

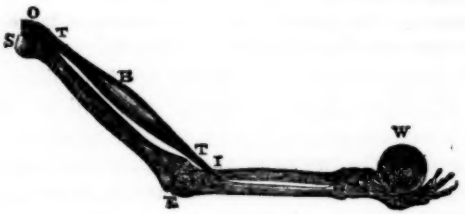
THE MUSCULAR SYSTEM.

The bony structure was the subject of the preceding Article of this series. But, perfect as its adaptations were shown to be, it would, nevertheless, be useless but for the always accompanying muscular system—that arrangement of fibre, the contraction of which produces all motion and action. Muscle is the LEAN MEAT of animals, and is constructed of fibres or strings, so plainly seen in the breast of the chicken; separated from each other—first, into shreds, or small strings, and, secondly, into separate *bundles* of fibres, called the muscles. Their special function is *contractability;* and being generally attached, one to one bone, and another to another, across the several joints, so that their contraction moves the bones upon the joints, and this produces motion. Andrew Combe's description of the muscular system will doubtless be found as good as any other, and is therefore quoted.

"Every muscle or separate bundle of fleshy substance, is composed of innumerable small fibres or threads, each separated

from, and at the same time loosely connected with, the others, by a sheath of cellular membrane enveloping it, but which is so thin as not to obscure the colour of the fibre, or attract notice unless specially looked for. Each muscle is in its turn separated from the neighbouring muscles by thicker layers or sheaths of the same membrane, in some of the cells of which fat is deposited, especially where the interval between the muscles is considerable; and hence the elegantly rounded form of the limbs, which, without this fat, would present the rigid, sharp, and prominent outline which we see occasionally in strong persons of a spare habit of body. From the loose texture of the connecting cellular membrane, the muscles enjoy perfect freedom of motion during life, and admit of being easily separated from each other after death, either by the knife, or by simply tearing the cellular tissue.

"Muscles, speaking generally, may be divided into three parts, of which the middle fleshy portion, called the belly, is the most conspicuous and important. The other two are the opposite ends, commonly called the origin and insertion of the muscle. The belly is the bulky and fleshy part, by the contraction or shortening of the fibres of which, the two ends are brought nearer to each other, while the belly itself swells out in a lateral direction. When we attempt to lift a heavy weight in the hand, or to overcome any resistance, the muscles which bend the arm may be seen and felt to start out rigid and well defined in their whole extent, while their extremities tend powerfully to approach each other, and of course to carry along with them the bones to which



they are attached. In consequence of this tendency, if a weight be unexpectedly knocked out of the hand before we have time to obviate the result, the muscles, having then no resistance to overcome, will contract violently, and throw the hand up with a sudden jerk. Voluntary motion is, in fact, effected by the contraction of muscles acting upon, and changing the relative positions of the bones or solid support of the system, and therefore almost all muscles are attached to one bone by their ORIGIN, and to another by their INSERTION; the former being merely the fixed extremity, towards which the opposite and more moveable end,

called the INSERTION, is carried by the shortening of the intervening belly of the muscle.

If the muscles are in general attached to bones, it may be asked,—How can the bones, which present comparatively so small a surface, afford space enough for the attachments of muscles which are so much larger, and which even appear in successive layers above each other? This difficulty is obviated in two ways. In the first place, the heads and other parts of bones to which muscles are attached, are enlarged so as to present a greater surface than the body of the bone, and form what are called PROCESSES, for the express purpose of affording greater room; and, secondly, instead of all the fleshy fibres of a muscle being prolonged to its points of attachment at the bone, they, with a few exceptions, terminate gradually, as they proceed from the belly, in a white shining tendon, of a much smaller size than the muscle, but of great strength, which is inserted into the bone. These tendons, or sinews as they are occasionally named, conduce greatly to symmetry, elegance and freedom of motion; and may be traced under the skin, on the back of the hand, and in the very powerful specimen at the heel, called the tendon of Achilles. The hamstrings are another obvious example, and may be easily felt becoming tight when an effort is made to bend the knee. There are a few muscles not attached to bones by either extremity, and also a few which have no tendons. Those which surround the eye-brows, the mouth, the gullet, and some of the other natural passages, are of the former description; as is also the heart. Some of the muscles of the trunk have no tendons, but these are few in number, and may at present be considered exceptions to the general rule.

In man, and in most the animals with which we are familiar, the muscles are of a red colour. This, however, depends entirely on the blood which they contain; for so far is the colour from being essential to their constitution, that it may be destroyed by washing out the blood which produces it, the muscular substance remaining in other respects unchanged. Hence the color of the muscles varies with that of the blood—is dark where it is dark, pale where it is pale, and white where it is white. The true characteristic of muscular fibres is "contractility, or the power of shortening their substance on the the application of stimuli, and again relaxing when the stimulus is withdrawn."

"The direction in which the fleshy fibres run, determines the direction of the motion effected by their contraction. In some muscles the fibres are nearly parallel, and consequently act in a straight line. In others they run obliquely, producing a corresponding obliquity of motion, while in others they are disposed like feathers in relation to a quill, and are therefore styled penniform. A few are circularly disposed around openings, and contract towards a common centre, like the mouth of a purse closed by its strings. When the direction varies, it is always to effect

a particular kind of action. Remarkable contrivances appear for this end; one muscle of the lower jaw, for example, is divided into two distinct fleshy bellies by an intermediate thin strong tendon, which passes through and plays in a pulley adapted for its reception: its two portions being by this means enabled to operate with full effect almost at right angles to each other. A similar arrangement is found in the trochlearis or pulley-muscle of the eyeball; and modifications of a different kind occur in other muscles, as in those of the fingers and toes, wherever a particular object is to be accomplished.

The chief purpose of the muscles is obviously to enable us to carry into effect the various resolutions and designs—or volitions, as they are termed by philosophers,—which have been formed by the mind. But while fulfilling this grand object, their active exercise is at the same time highly conducive to the well-being of many other important functions. By muscular contraction, the blood is greatly assisted in its course through the smaller vessels and more distant parts of the body, and its undue accumulation in the internal organs is prevented. The important processes of digestion, respiration, secretion, absorption, and nutrition are promoted, and the health of the whole body immediately influenced. The mind itself is exhilarated or depressed by the proper or improper use of muscular exercise; and it thus becomes a point of no slight importance to establish general principles by which that exercise may be regulated.

The first requisite for healthy and vigorous muscular action, is the possession of strong and healthy muscular fibres. In every part of the animal economy, the muscles are proportionate in size and structure to the efforts required from them; and it is a law of nature, that whenever a muscle is called into frequent use, its fibres increase in thickness within certain limits, and become capable of acting with greater force and readiness; and that, on the other hand, when a muscle is little used, its volume and power decrease in a corresponding degree. When in a state of activity, the quantity of blood which muscles receive is considerably increased; and, in consequence, those which are much exercised become of a deeper red color than those which are less used. The reason of this will be evident, when we recollect that to every organ of the body arterial blood is an indispensable stimulus, and that its supply is, during health, always proportioned to the extent and energy of the action. When any part, therefore, is stinted of its usual quantity of blood, it very soon becomes weakened and at last loses its power of action, although every other condition required for its performance may remain unimpaired.

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"Something more than mere muscle, however, is required for the production of regulated or voluntary motion. The muscle itself, though perfect in strength and in structure, would other-

wise remain inert. A stimulus is required to excite it to activity, and to direct its contraction; and this stimulus is conveyed to it by the nerves. As we write, the muscles which move the fingers and guide the pen obviously follow the commands of the will; and the moment the will is withdrawn, they cease to operate. If the will be feeble and undecided, the muscular movements will be equally weak and irresolute; whereas, if the mind be powerfully excited, and the will energetic, strength, rapidity, and decision will equally characterise all the movements of the body. Under the intense excitement and headlong fury of madness, the muscular action of an otherwise feeble man acquires a force often exceeding all our powers of control."

"It will be at once perceived from this description, that in effecting voluntary motion, we must have in operation, first, The brain, or organ of mind, as the source of the will; secondly, The nerves, which convey the intimations of the will to the muscles; and, thirdly, The muscles themselves, by whose contractile powers motion is produced. It will be understood, also, why the number and size of the nerves distributed to a muscle, are in proportion, not simply to its volume, but to the variety, frequency, and vivacity of the movements required from it; and why some small muscles employed in many combinations, are therefore supplied with a greater variety of nerves than others double their size, but with more simple functions."

"Muscular power is (other circumstances being equal), proportioned to the size of the muscle; but it often happens, that great power is required, where bulk of muscle would be inconvenient or cumbersome. In such cases, the muscle is supplied with an increased endowment of nervous filaments, which compensate by the strength of stimulus, for what it wants in bulk of fibre. Many birds, for example, require great muscular power to sustain them in their long and rapid flights through the air, and owe its possession chiefly to the strong stimulus imparted to moderate-sized muscles by large nerves, which add extremely little to their weight; whereas, had the greater power been obtainable only from an augmentation of fleshy fibres, the consequent addition of weight would, from the greatly increased difficulty the animal must have felt in raising and sustaining itself in the air, have gone far to counterbalance any advantage gained on the side of the power. But in fishes, which float without effort in their own element, size produces no such inconvenience, and their strength, accordingly, is made to depend more on the volume of the muscle than on its nervous endowment,—showing a beautiful adaptation to the mode of life and wants of the animal.

As voluntary motion depends as much on nervous stimulus as on muscular agency, it happens, that whatever interrupts the action of the nerves, puts a stop to motion as effectually as if the muscular fibre itself were divided. Injuries and diseases of the

brain, whence the will emanates, are well known to be accompanied with palsey, or want of power in the muscles, although in their own structure the latter remain sound. Sleep and narcotics, too, suspend voluntary motion, solely in consequence of their action on the nervous system. Ardent spirits, in like manner, disturb the regularity of the muscular action in no other way than by previously disordering the brain; and hence the unsteady gait and faltering elocution of a semi-intoxicated person are sometimes removed in an instant by some powerful mental impression being suddenly made, sufficient to restore the brain to its natural state, and thereby to give unity and steadiness to the nervous impulse proceeding from it to the muscles. For the same reason, although the brain and muscles be perfectly sound, yet if the communion between them be impaired or destroyed by the compression or division of the nerves, the muscles cease to act.

The muscles of the human body are upwards of 400 in number, and form several layers lying over each other. That some conception may be formed of their arrangement and distribution, the superficial layer, or that which appears immediately on removing the skin, is represented in the annexed wood-cut, taken from a little volume entitled, "The Physician," published by the Society for the Diffusion of Useful Knowledge. To understand the uses of the various muscles, the reader has only to bear in mind that the object of muscular contraction is simply to bring the two ends of the muscle, and the parts to which they are attached, nearer to each other,—the more moveable being always carried towards the more fixed point. Thus when the sterno-mastoid muscle *g* contracts, its extremities approximate, and the head, being the moveable point, is pulled down and turned to one side. This may be easily seen in the living subject, the muscle being not less conspicuous than beautiful in its outline. Again, when the powerful rectus or strait muscle *b*, on the front of the thigh, contracts with force, as in the act of kicking, its lower end attached to the knee-pan and leg, tends to approximate to the upper or more fixed point, and pulls the leg strongly forwards. This occurs also in walking. But when the sartorius or tailors' muscle *c* is put in action, its course being oblique, the movement of the leg is no longer in a straight line, but

in a cross direction, like that in which tailors sit; and hence the name sartorius.

Another variety of effects occur, when, as in the rectus or straight muscle of the belly *i i*, sometimes one end and sometimes both are the fixed points. When the lower end is fixed, the muscle bends the body forward, and pulls down the bones of the chest. When, as more rarely happens, the lower end is the moveable point, the effect is to bring forward and raise the pelvis and inferior extremities; and, when both ends are rendered immoveable, the contraction of the muscle tends to compress and diminish the size of the cavity of the belly, and thus not only assists the natural evacuations, but co-operates in the function of respiration.

In contemplating this arrangement, it is impossible not to be struck with the comsummate skill with which every act of every organ is turned to account. When the chest is expanded by a full inspiration, the bowels are pushed downwards and forwards, to make way for the lungs; when the air is again expelled, and the cavity of the chest diminished, the very muscles *i i i*, which effect this by pulling down the ribs, contract the bowels also,—pushing them upwards and inwards, as can be plainly perceived by any one who attends to his own breathing. By this contrivance, a gentle and constant impulse is given to the stomach and bowels, which is of great importance to them in contributing to digestion and in propelling their contents; and one cause of the costiveness with which sedentary people are so habitually annoyed, is the diminution of this natural motion in consequence of bodily inactivity.

From the preceding exposition, the action of the muscles *a, k, l*, which bend the arm and forearm will be easily understood, and some notion may be formed of the innumerable combinations into which a system composed of nearly 400 pieces may be thrown, in effecting all the movements required from the human frame. In some of the operations in which we engage, nearly the whole, and in others only a part, of the muscles are thrown into action at one time. The simultaneousness of action which obtains in such instances,—which occurs in almost every act of life, however simple,—and without which no dictate of the will could be harmoniously and successfnlly obeyed,—depends solely on the distribution and connections of the nerves which animate the muscles. Every individual fibre of every muscle is supplied with nervous filaments, and different fibres of the same muscle are indebted for the simultaneousness of their excitement to the connection established between each of them by these filaments. Wherever many muscles combine to execute an important movement, they are uniformly found to be provided with, and connected by, branches from the same system of nerves; as, without this means, simultaneousness and harmony of action could not be insured. Thus the muscles which cover the upper part

of the chest co-operate in the voluntary movements of the arm, and at the same time in the respiratory movements of the chest; but these, being two distinct purposes, require different combinations of the muscles among themselves. To effect these combinations, two sets of nerves are provided, as has been shown by Sir Charles Bell; the one regulating the respiratory, and the other the purely voluntary movements of the muscles. This is the true reason why the same muscle sometimes receives nerves from two or three different quarters; a circumstance which, before the principle was discovered, and when all nerves were considered alike, was altogether inexplicable, and seemed a work of supererogation.

The influence of the nervous agency may be still farther illustrated. When the trunk of a muscular nerve is irritated by the contact of an external body, or by the electric spark, the muscles which it supplies instantly contract, but without either harmony or permanency of motion; the contraction is like the violent and ill-regulated start of convulsion. It is the influence of the brain and mind in the equal diffusion of the required stimulus to each muscle, in the exact proportion needful, that characterises healthy and sustained voluntary motion, as opposed to the irregular convulsive start. Nothing can be more wonderful than the accuracy with which, in the most delicate movements, this stimulus is adjusted and apportioned to such a variety of parts, particularly where practice, or in other words education, has rendered the combination of powers easy and certain. Not to mention the more obvious and graceful movements of dancing, fencing, and riding, we discover, in the management of the hand and fingers by engravers, sculptors, watch-makers, jugglers, and other artists and mechanics, a minute accuracy of muscular adjustment to effect a given end, which is the more surprising the more we consider the complicated means by which it is effected.

In consequence of the co-operation of both nerve and muscular fibre being required to effect motion, excess of action in each is followed by results peculiar to itself. If the NERVES preponderate, either constitutionally or from over-exercise,—as they are apt to do in highly nervous temperaments,—their excessive irritability renders them liable to be unduly excited by ordinary stimuli; and hence, as in hysteric and nervous females, a proneness to sudden starts, cramps, and convulsions, from causes which would scarcely affect an individual differently constituted. Such persons have little muscular power, except under excitement; they then become capable of great efforts of short duration, but sink proportionally low when the stimulus is past. If, on the other hand, the MUSCLES predominate, as in athletic strong-built men, the nervous system is generally dull and little susceptible of excitement, and the muscles which it animates are consequently little prone to the rapid and vicious action that accompanies the predominance of the nervous functions. Great

strength and capability of bodily labor are then the characteristics.

Great muscular power and intense nervous action are rarely conjoined in the same individual; but, when they do happen to meet, they constitute a perfect genius for muscular exertion, and enable their possessor to perform feats of strength and agility, which appear marvellous to those who are deficient in either condition. The most successful wrestlers and gladiators among the ancients seem to have owed their superiority chiefly to the possession of both endowments in a high degree; and among the moderns, the most remarkable combination of the two qualities is exhibited by some of our harlequins, clowns, rope-dancers, and equestrian performers, and also by those who display their strength and power of equilibrium in balancing, wheels, ladders, or other heavy bodies, on the chin; and whose performances require from the small muscles of the jaw and neck, a force of contraction which, when reduced to calculation, almost exceeds belief. Belzoni combined both conditions in a high degree.

The value of this muscular apparatus, is very great. Without it we could neither chew, nor swallow, nor digest, our food; could not breathe; could not move! In that case, of what value life, and all its other blessings? They would otherwise only tantalize us with the presence of objects most desirable, but to us utterly unattainable. But this motion-giving apparatus enables us to walk, talk, labor, prepare food, and carry out the other designs of our being. Who can measure, either the GOOD attained by its instrumentality, or the amount of happiness experienced in its own independent action?

Hence the importance of perfecting it by culture. But of this in another connexion.

ARTICLE II.

THE PHILOSOPHY OF LIFE. ITS FUNCTIONS, AND THEIR RATIONALE, OR CAUSES, AS DEVELOPED BY PHRENOLOGY, PHYSIOLOGY, AND MAGNETISM. NO. IV.

IN the preceding article of this number of the Journal, together with one on the osseous system, and another on the vital, we have the ORGANS of the human system, but not that vital principle which gives them ACTIVITY. Without this principle, though they present a beautiful adaptation of means to ends, yet they are utterly useless, as in cases of death, when this principle has left them. In short, the ORGANS of the body—the bones, muscles, skin,

cellular tissue, heart, lungs, stomach, liver, spleen, kidneys, intestinal canal, &c. throughout every physical organ, are only so many ROPES and PULLEYS. They are indeed PREPARED for action, but not *in* action. They are the machinery without the MOTIVE POWER—the steam engine without the steam.

What then is this motive power, this vital steam, which "let on" to this apparatus, of which the body is composed, sets it in action, and thus produces all the phenomena of life? That there is SOME instrumentality—something, some agent, or entity, or vital principle, which is to this apparatus of bones, muscles, and organs, what steam is to the machinery, namely, setting the whole in MOTION, is rendered evident by the settled principle observable throughout all nature, that every FUNCTION employed is effected by some INSTRUMENTALITY. This is fundamental truth—a philosophical axiom, or rather, a summary of nature's modus operandi, on which we may rest as fully assured as on mathematical results, or any other first truth of nature. Since SOME INSTRUMENT is employed to effect every function of nature, shall this function of MENTALITY—the very highest function of life—form an exception? Life is but the *combination* and the *summary* of all functions. Shall some instrumentality be employed for them separately, and not for life, their aggregate? I envy not him his philosophy who supposes life an effect without its cause, a means without its end, a something produced by a nothing.

Nor need we despair of *ascertaining* this entity. It is *palpable*, and its laws and modus operandi cognizable. Life is *not* that *mystery* which we are generally told it is. Nor are its *whys and hows* those impenetrable secrets generally represented, locked up in the bosom of the Deity, so that the very attempt to descry them is blasphemy. No; they are plain truths cognizable by man. Future ages will yet read them as we read our alphabet.

Though the Editor does not claim to be fully informed touching this *quo modo* of life, yet he claims to know its *fundamentals;* and will now proceed to explain them.

Our last article on this subject attempted to prove that Magnetism was the agent or instrumentality of life in all its forms. And what instrumentality equally subtle, ductile, permeating, transferable, efficient, and all-pervading? What every way fitted for this great function of vitality—the function of all functions?

But how does this element proceed in its production and evolution of life? If Magnetism is the instrumentality of life, it of course carries its various laws into that life. These laws form a constituent part and parcel of its very nature, and are inseparable from it; and of course, magnetism being the instrumentality of life, the laws of either are the laws of the other. Moreover, the *modus operandi* of life, that is, the *how* it proceeds, is to be found in the laws of Magnetism. In what *way* then do they subserve the instrumentality of life?

A constituent characteristic of Magnetism is its divisibility into two primitive elements, called positive and negative poles, or forces. The same is true of Galvanism or electricity, only different modes of producing and applying magnetism. Precisely in what these two elements consist, it may perhaps, in the present limited knowledge of the science, be difficult to say. We will barely suggest, that one force is heat and the other cold; that the former is expansive and repulsive in its nature, and the latter attractive, and that it is the alternation and combinations of these forces which produce the motions of the heavenly bodies, and of course seasons, the growth of vegetables, and the growth and all the functions of animal life and of mind.

But, be this all theory—be the nature of these forces whatever it may—one thing is certain, that magnetism consists of said forces, and can never be produced without *both*, and their alternation. They are called the *positive* magnetic force and the *negative* magnetic force.

These forces have an attracting and repelling nature or property. Thus, positive poles always repel each other, and so do negative, but a positive pole always attracts a negative, and a negative always attracts a positive. That is, magnetize a knife-blade positively, and the point of a needle positively, and its eye negatively, and the knife-blade will always *drive* the point of the needle *from* itself, but *attract* the *eye* of the needle *to* itself. But magnetize another knife-blade, or any other piece of steel, with the *negative* pole, and it now *attracts* the *point* of the needle, but *repels* its *eye*—just the reverse of the positively magnetized blade or steel. Now this is *universal*. And this attraction is *powerful*. Magnets have been constructed so powerful as to attract, that is, lift, many hundred pounds, and repel as strongly.

Now, it is the action of this great principle—the attractiveness of opposite poles for each other, and the repulsiveness of similar ones, which embodies the *great* instrumentality of life and motion—the one attracting and contracting, the other repelling and expanding, and their alternate attractions and repulsions of course produce motion, sensation, and all the phenomena of life.

That the human system manufactures both of these forces, was proved in Article three of this series, which, if the reader does not fully remember, we beg him to read in connexion with this. The outer or serous surfaces of both the body, and of all its several organs, manufacture, or gather and supply, the positive force. The *inner* surfaces of the body and of these organs, or the *mucous* surface of the alimentary canal, and of the heart, lungs, stomach, liver, spleen, kidneys, &c., collect and supply the *negative* force. This is settled beyond a doubt. Now, the negative force manufactured at the *outer* surfaces of the body and inner organs, *attracts* the *negative* force supplied by the *inner* surfaces of the body and internal organs, and *in* thus seeking each

other they produce those alternate attractions and repulsions which effect sensation, motion, &c.

If this theory is called in question, we ask its opponent one question; namely, what that great quantity of one of these electric or magnetic forces, found so abundantly on the skin of man and animals, is put there for? Of what *use? Why* there? That is: On clothes from next the skin in winter, why these electric sparks generally observable? Why the same sparks when you stroke the back of the cat and dog? These sparks are of course electric. But if the two forces of which electricity is composed were equal, there would be no sparks. These sparks are *proof positive* of the *predominance* of one force at the skin. Oh, but it is in the *heat.* Then heat a log, or iron, or clay, or any inanimate thing you please, to a blood heat, wrap it up, and after a time remove the bandages with the same amount of friction, and find these sparks if you can. They are found *only* on the surface of *animals,* and *demonstrate* the presence of *one* electric or magnetic—both the same—force over the other. Now *why* this accumulation of one electric force at the *surface* of animals. Simply because the skin *secretes* one of these forces, and not the other; and on employing friction, that is, disturbing its quiet ingress to the skin, you remove the preponderating force from the skin, and it again seeks its equilibrium, and in doing so produces the sparks observed, which are like that equilibrium sought by these preponderating forces in the clouds, which produces thunder and lightning.

Fully attested cases are on medical record of persons exceedingly sick, and then in the act of dying, being all in a light flame, as if some inflammable gas were oozing forth through the pores of the skin and then burning up. It is the disengaging and returning of this positive force, and its again seeking its equilibrium; this producing a flame on the same principle with that which produced the sparks already explained. If magnetism is life, what is death but a returning equilibrium of these two positive and negative forces of which it is composed?

Once more: Since magnetism embodies the principle of life, the exercise of the functions of the latter expend the former. That is, *in and by* the expenditure of magnetism, it is, that we live, and move, and have our being. We are vital, self-acting galvanic bodies. We gather from food, and air, and sleep, that supply of magnetism which feeds muscle, nerve, and brain with that magnetism, or vitality, which they expend in every motion, sensation, feeling, and thought, experienced by man or brute. Hence, this vito-galvanic battery must be frequently supplied, or its supply of *magnetism* becomes exhausted, that is, as it were *burnt* up, and we become exhausted, and perhaps die. And we must have *both* forces, that derived from the skin, and that supplied by the mucous membrane from food and breath. See how all this tallies with the necessity of a frequent re-supply of materials to this galvanic battery.

Having found the philosophy of motion to be embodied in the

alternation, or attraction and repulsion, of these magnetic forces, let us proceed to look for some of its other modes of producing some of the other functions of life. And first, how is *concert* of action produced? Muscular, for example? As follows: These forces are each attracted, the one from the serous or outer mem brane, the other from the mucus or inner membrane, along the nerves, to certain magnetic deposits, or centres, or stations, called poles. It should be observed that the nerves are the tracks or railroads of magnetic travel, and serve as its *conductors* to and from, or wherever its expenditure is demanded, and themselves exhaust much of it in experiencing sensation, directing motion, and performing their various functions. Many of these poles of both forces occur in the joints, and hence the pain experienced in the joints consequent on their disturbance or derangement. Added to this, they have other larger poles, which are to the smaller ones, what the sun is to the planets. Thus, standing upon the earth, we can spring several feet into the air, or forward, or backward; that is, throw a weight of one hundred and fifty pounds, more or less according to the weight of our bodies, to a considerable distance. This requires both a powerful action of muscular energy, and at the same time, *concert* or *unity* of action. How is *this* effected? by a great central pole of the muscular system in the cerebellum, at its back and lower portion, and on its mesial or middle line. It is within the brain very near the middle of a line drawn from the lower portion of one ear to that of the other. Or thus: it is located just above, and behind the foramen magnum, or great opening in the base of the skull. The following engraving from Sherwood's Motive Power, though copied into volume four of the Journal, deserves re-inserting in this connexion. It is at the points marked B, and is on each side of the middle line of the cerebellum.

A. A. Basilar view of the Cerebellum. B. Organ of Motion.

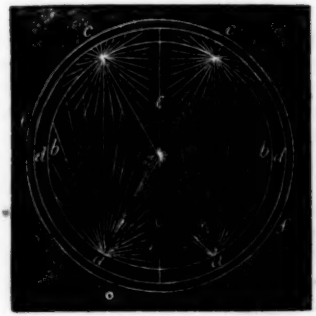
One proof of its existence as well as location at this point, is to be found in the fact, that patients afflicted with the St. Vitus dance, or spontaneous, involuntary, and uncontrollable, twitching of the voluntary muscles, are always tender at this point. This we should expect, in case of such disease, which consists in a derangement of the function ascribed to it. Clairvoyants by the score have been catechized touching its existence, and all agree in regard to its location.

Again: Amativeness or the cerebral organ of the reproductive system, is located in the cerebellum. And if *one* of the physical organs has its cerebral organ, they all have. Nature is not thus partial. For the same reason that one bodily organ must have its cerebrel organ, all must. This is correct analogical inference. And that same inference would locate in the cerebellum evidently devoted to the bodily functions. A similar argument may be drawn from the fact that the stomach has also its cerebrel organ. Why not the muscles, as well as the stomach, and re-productive system?

This organ, then, controls muscular motion, by sending off its mandates to the several muscles, when their action is required simultaneously. That is: it lets on to the muscles this vital stream, in the form of these magnetic forces, which, when thus let on, contracts them, that is, produces action in them; and their only action being to contract or expand, in producing such action it causes such contraction or expansion as occasion requires.

This principle explains the pulsations of the heart. They are involuntary; that is, independent of the human will. Some means must therefore be employed for effecting them spontaneously; and those means must be self-acting. We conclude this article by a quotation from a manual for magnetizers, by Dr. Sherwood, the first to demonstrate this theory of the magnetic organization of the human body.

"When the heart is laid open and distended in a circular manner (*d d*, walls of the heart; *e e*, septum of division between the auricles and ventricals; *f f*, pericardium, as seen in this figure,



it is found by the manner in which it is constructed to have four large poles in its circumference; *a a*, and *c c*, the axis of which cross each other in the centre pole of the heart, like those of the circumference of the brain. The forces from the poles, *a a*, radiate along the ligaments or braces, called *columna cornea*, to the sides of the ventricles; *b b*, and the forces also radiate from the poles in the auricles *c c*, along their ligaments, as seen in the

figure: all of which are first expanded and then contracted in the motions of the heart, by the action of the forces from the poles.

The number and situation of these poles are, from this view of the construction of the heart, so self-evident as to preclude the necessity of a solitary remark; but it may be asked, if the motions of the heart are produced by the action of these poles upon its muscles, from whence are the forces derived which sustain these poles?*

The answer is, from the serous and mucous surfaces of the body, which are maintained in negative and positive states, for such purposes—the serous, including the skin supplying the positive, and the mucous, including the alimentary canal, the negative force, which are conducted to the poles in the organs through the nerves in these surfaces—the negative poles attracting the positive force, and the positive poles the negative.

It is a matter of common observation that magnetic poles of the same denomination repel, and those of opposite denominations attract each other; and in order to ascertain the degree of force with which they repel and attract, it is found by experiments, conducted on the most rigid principles of inductive philosophy, that they repel and attract each other with a force proportioned to the quantity of these forces in given spaces, or the spaces they occupy. It is also ascertained, in the same manner, that when they repel, they expand, as seen in the case of iron filings, attached to poles of the same denomination.

And when they attract, they contract, as seen in the case of iron filings attached to poles of opposite denominations, with a force proportioned to their quantities in the spaces they occupy. The two poles, then, of the same denomination in the opposite hemispheres of the brain may, through the spinal nerves attached to these hemispheres, expand one set of muscles on one side of the body, limb, or organ, at the same time that those of the opposite denomination contract the antagonist muscles on the other; for the muscles, like the organs and nerves, are necessarily double, for the purpose of producing motion by their simultaneous action.

They may also expand one set of muscles by the repulsive, and contract their antagonists by the attractive force, in the same way that one metallic wire is expanded with the repulsive, and another contracted with the attractive force. Thus, when, by the mere exercise of an inclination, excited by a sensation, we incline to expand one set of muscles to extend a limb, we incline to contract their fellows at the same time; so that when one muscle expand, its fellow necessarily contracts; and when another contracts, its fellow expands.

These motions called attracting and repelling, are, in other words, the pushing and pulling motions; and if motion is produced in man and other animals by the action of these forces, we ought to be able to recognise the same motions in the fluids

of the body, whether æriform or aqueous, and also in the organs by which they are moved.

On a minute examination of this subject, we find that in the formation of the organs, the same order is observed in the distribution of the membraneous surfaces as in the formation of the external and internal surfaces of the body. The brain, heart lungs, stomach, intestines, liver, spleen, kidneys, uterus, and cystis, are all covered with a serous membrane, and their inner surfaces are lined with a mucous membrane. On observing the action of the air and of the lungs in breathing, we instantly recognise those motions.

In reflecting on the great power which it was necessary to give to the heart, it was easy to see that the diagram or plan for its construction must conform to that necessity. This consideration, however, presented no difficulties; for the sources from which it might derive the necessary strength and durability, under the action of these forces, were abundant, and we accordingly find its strong muscles supported by braces and surrounded by additional membranes, presenting extensive surfaces for the accumulation of these forces.

On an attentive examination of the action of this organ, and of the motion of the blood in the arteries, we again recognised these motions in both, in the clearest manner.

The heart is constructed, and acts on the principle of the pump; the fluids being attracted through the veins and other absorbent vessels in steady streams to the heart, with an intensity of force equal to that with which the ventricles repel them through the arteries.

Every repulsion of the heart repels or pushes the fluids in the arteries, and every attraction pulls the fluids in the absorbent vessels.

The motions of the pulse correspond exactly with these laws and these motions; for every repulsion is succeeded by an expansion in the artery, and every attraction by a contraction of it. The same phenomenon is found in the hose of a fire engine when in motion. The water moves in the hose form the cistren or hydrant, in a steady stream to the engine, and from the engine through the hose, with the motions of the pulse.

Sensations and inclinations, like repulsions and expansions, and attractions, and contractions, are attributes of these forces. The inclinations belong to the sensations, whether repulsive or attractive, as the expansions do to the repulsions, and follow them in the same order.

These spiritual, or male and female forces are innate in every kind of matter, without possessing any character in common with it, whether it be ponderable or imponderable; and in their organized or magnetized state, they were the foundations on which matter was laid, in the formation of the solar system, and of the mineral, vegetable, and animal kingdoms. Repulsions, expansions, attractions, contractions, sensations inclinations. *sympa-*

thetic action, motion, and form, ure then, in this order, the attributes of these forces, by which that system and these kingdoms were formed with a precision, and adorned with a beauty, that defy imitation.

Nothing can therefore equal the adaption of these forces to produce such results; for besides their unlimited power, which can make a world tremble like a leaf, the great velocity of their almost inconceivable tenuity, enable them to penetrate the most minute orifices, and construct an infinite variety of bodies of every form and size, and produce motion in the smallest structures with the same geometrical accuracy as in the largest.

These views of duodynamics, or moving powers in animate and inanimate matter, may at first appear very strange and unaccountable even to men of science who have little or no knowledge of this subject, and I may therefore direct their attention to another example of the repelling, and expanding, and attracting and contracting powers of those forces, in illustration of these views, and which may be seen and tested in the most satisfactory manner in the recently recovered process of gildidg metals by the action of these forces in solutions of gold,

I may also direct the attention of physicians and surgeons to the experiments of Doctors Laroche, and Crusell, of St. Petersburg, published in the Dissector, in which cateracts were formed in the eye with the attractive and constructive force, and were afterwards dispelled, in two minutes, with the repulsive and expansive force, and which cannot fail to suggest to them not only the great importance of a knowledge of the magnetic organization of the human system, but also of the magnetic character of their remedies for diseases.

Every repulsion of a fluid, in elastic bodies, produces expansions; and every attraction is succeeded by contractions of these bodies, according to a law of these forces, viz: repulsions expand, and attractions contract, with powers proportioned to their quantities in given spaces.

ARTICLE III.

WOMAN—HER CHARACTER, INFLUENCE, SPHERE, AND CONSEQUENT DUTIES AND EDUCATION. NO. II.

In form, the female head is higher and longer than that of the male, but less developed at the sides, or in the animal and selfish range. Hence force is not her nature, but kindness and goodness. She is not constituted to buffet the billows of adversity, to face enemies, and jostle and elbow her way through life. She is composed, rather, of the sweet and the good—is by nature more pure, and holy, and elevated than man. Hence, the term *angelic* often applied to her, but rarely to man. Her nature places her far above the turmoils and strifes of earth, and constitutes her the embodyment of amiableness and loveliness.

Not that she is necessarily tame and inefficient—qualities generally associated with goodness. Indeed, the moral affections are the very concentration of power, at least in the *moral* world. The most effectual method of conquering an enemy is, when he smites one cheek, to turn the other. Force may trample him in the dust even kill him, but it is *moral* superiority—it is *requiting evil with good*—that alone can completely subdue the *spirit* of enmity. Now, this constitutional element of female character puts on her head the *crown of the moral world.* Her persuasion is more efficacious than man's force.

Let no one accuse me of fulsome flattery of the sex. I build my inference on the two immutable truths, first, that the moral virtues are in truth more efficacious than brute propensity, especially on mind; and secondly, that these moral virtues are by constitution more fully developed in woman than in man. The first is a cardinal doctrine of both the Bible and man's nature, and the second is a clear deduction from her phrenological developments—her head being longer and higher than that of man in proportion to its width, and her temperament much superior in point of fineness, than man's. Both these positions are indisputable, and the inference obvious, that woman is more efficient than man.

This indisputable principle discloses both the true source of woman's power, and the impropriety and even weakness, of her attempts to effect by anger what she was made to effect by love. Woman should undertake nothing which requires anger, or scolding, or for a moment ruffles the serenity of her temper. Woman was never made to scold. She can *never* blame or punish without thereby violating her nature, not in one of its unimportant items, but *leading elements.* "The glory departs" from woman whenever she scolds, or frets, or flings, or punishes, or even blames. For the same reason that it shocks all the finer feelings more to hear a *woman* curse and swear than man, is it proportionally the more incongruous and shocking for woman to be rated a scold than man. *Man's* wrathfulness is bad enough. Woman's is intolerable. Him it depreciates; her it degades. Elevated feeling and a high-toned sense of the female character are pained and shocked at every manifestation of female fretfulness, fault-finding, and the like, because incongruous in themselves, and a violation of her nature. But we delight in beholding her gentle and winning, mild and persuasive, and effecting her ends by appeals to the moral feelings and intellect.

To rebut the idea that woman *must* scold in order to accomplish much, is now not necessary. Our subject refutes it at once and completely, and shows that a scolding female is a *thing*, not the angelic *woman.* It shows that scolding and fretfulness deprive her of her power. The passionate woman is Sampson shorn. By a law of mind, we cease to *respect* a scolding, teazing woman, and *therefore* she loses her influence over us.

The wife who blames and reproaches her husband, has lost her power over him. He favors her as little as he can, and grudges that. So says nature. But she whose loveliness has won the *affections* of a husband, may make him the veriest slave on earth, and abuse him at that, and yet bind him still the tighter in the silken bonds of her love. *This is human nature.*

Again, woman's *great* sphere is the family—her influence in perfecting the character of her husband, and in weaving the character and *embroidering the souls*, of her children. The former, we dismiss for another article, but invite *special* attention to her *power over the infantile* mind. Please note two points.

First, the tenderness and flexibility of the infantile state. Its tenderness. Hark, how soft and tender that infant's tone! So smooth, so delicate, so lamblike, so gentle. The rough and boisterous has not yet been implanted. How sweet its looks! No sour scowl, no fierce grimace. And if it cries, it cries of *pain*, not wrath. As it begins to totter about, knowing no better, it picks up something it should not have. "Put that down!" exclaims the mother sternly. It looks a second, with inquiring surprise, to see whether she really meant it. Up turns his ruby lip. Out rushes a torrent of tears from his before beaming eye. Distortions convulse his face. His *soul* is smitten. You have hurt his delicate feelings more than words can express, and his grief is inconsolable till the paroxysm subsides. The mother spoke *sharply*. The older children spoken to thus would not have been thus grieved, or grieved at all. They have been already hardened by a similar process, and can now stand and hear one opprobrious epithet after another heaped upon them unmoved. At length, this infant will have become equally case-hardened. A few such cutting intonations will sear *his* feelings too. He is not conscious of having done wrong. He took up the bowl or plate as innocently as if it had been a toy, and now to have his tender feelings thus harrowed up, wears off, ay, *sears* those exquisite susceptibilities which ought never to be hardened, but only to increase. It is this very exquisiteness which, unperverted, renders him happy. But these searing applications frequently applied, his previous exquisiteness of feeling becomes benumbed, and his susceptibility for enjoyment blunted. Oh, mother! why did you do it? I know you did not mean it. Accustomed to severity of expression, and the sharp, harsh, grating language of that scolding habit you have been taught to consider a female *virtue*, you were little aware how deeply the barbed arrow, dipped in spleen, entered his soul. Oh! if you could simply have avoided thus piercing his tender susceptibilities, and opening the veins of his *soul*, how inexpressibly more happy he would have been. Dear mother! by all your yearning tenderness for your darling never do that again! Never more scathe and sear his delicate susceptibility.

"Oh, but its little feelings should not be so very tender." Yours should not be so very harsh. Did not *God* know how to construct them? They are the instruments of its enjoyment. Blunt them, and you thereby blunt its susceptibilities for enjoyment, as well as its moral sense. To be thus blamed when it was innocent as the lamb, and had not the least idea of doing wrong, deteriorates its finer moral feelings, wounds conscience, and creates the feeling that it has lost caste in your estimation.

The full force of this subject can be seen only in the light of that important law of mind, that the *powerful* action of any faculty *deteriorates* it. The painful action of Concientiousness, that is, the compunctions of a guilty conscience, *sears* this faculty, lowers down its tone, and weakens its power, and hence the second offence can be committed with much less scruple and pain than the first. The *painful* action of the condemning conscience has blunted its sensibilities. In like manner, the *painful* action of any faculty equally deteriorates and weakens its acuteness and power, and proportionally diminishes its capability of subsequent enjoyment. Hence, the necessity of gentleness and softness in all our tones and words, and manners towards infants and young children, and the evils of harshness and anger.

Nature is always true to herself. In creating the fish adapted to the water, God has also created the water adapted to the fish. In creating a

demand for breath, He also creates breath adapted to this demand. So in creating this demand for gentleness in the education of the young scion of immortality, he has created woman adapted thereto, and placed the infant in her soft arms for the express purpose, among others, of thereby shielding it against those harsher, sterner, grating influences to which placing it in the arms of man for education would necessarily subject it.

Mothers, do be entreated to banish from your lips all tart remarks, all manifestations of anger, all peevishness, and fretfulness, and fault-finding, and let this *gentleness* of your nature have its perfect work. Oh! that mothers would be *persuaded* to crown by culture this brightest ornament of lovely woman, and wipe out that stain of passion which too often distorts their lovely faces, and degrades their angelic natures.

INFANTILE EDUCATION.

The following, received after the above was in type, is so excellent in itself, and so applicable to our subject that we append it with great pleasure, and wish the same pen would often discourse on this subject, for he *feels* right, and *thinks* right, in regard to it.

Sir,—This morning, the 20th Sept. 1840, says a correspondent of the Montreal Courier, I took up my pen to secure on paper, the idea contained in the paragraph at the head of the following effusion. I did not then intend to write more, but only to keep the paragraph as a text for a future publication, which has been for some time contemplated by me.

My mind becoming more intent upon the subject I wrote rapidly what follows, and I send it to you, Mr. Editor, requesting its early publication, in the hope that immediate good, even to a small extent, may be done thereby:—

"See the exertions which some men make and the great expenses incurred in breeding, rearing and training horses for racing, hunting, and for other unproductive purposes. See the like exertion made and expenses incurred in rearing and training dogs for sports and amusements."

I mention these two items, only, for the present.

Were the young minds of the children of the rich carefully trained from the earliest dawn of feeling and reason, to gentleness, benevolence and piety, is it possible that such efforts and means would be so misapplied by them in after life, while innocent infant children were left suffering under poverty, and surrounded by vice and degradation only? Could the benevolent and pious mind of a high-souled and God-like man be so degradingly employed while myriads of children were left as it were, crying aloud to him from the depths of physical suffering and mental degradation? Beings who if charitably cared for, might be brought to the blessed condition of loving and beloved children of a pious and affectionate community.

I use the word "God-like" after the most serious reflection—for in this world I find nothing so God-like as the benevolent actions of a pious man. The God and Father of us all is pleased to manifest Himself to us in the most benign way through the agency of one another. He has told us that it is more blessed to give than to receive. Eighteen hundred years ago our Saviour gave us this assurance—and yet many of us who have the means to give still continue to feed and pamper dogs, and all the while they are doing so, they see or know that children are sunk in poverty, and consequent vice, who might be brought up to be gentle, generous, good; abounding in gratitude to their benefactors, and a blessing to all around them in their day and generation; instead of being vicious, degraded, criminal, a too many of them daily prove themselves to be.

Why are we so slow to strive for this blessing?—Chiefly because it is left to the school-master to teach the lesson in the school-house, and to the Clergyman to teach it in the church; whereas it should first of all be taught by the mother and the nurse—for they have the seed time, when the infant mind is not yet like the wayside—nor yet stony—nor yet scorched by the sun—nor yet covered with thorns—but free from tares, and then best fitted to receive the good seed, first of gentleness and love; next of benevolence, and in due time of piety and gratitude to God. After this early training will, profitably, come the labors of the school-master, and the higher and holier teachings of the Pastor, and they will bring forth a soil so prepared, and from seed so sown, some an hundred fold, some sixty fold, and some thirty.

Why has Christianity hithereto been so slow in preserving men from sin and its consequent misery? Chiefly because the man in his pride has not prepared woman to be the wisest, as she is the earliest, the purest, the most loving of all teachers. Would that I could proclaim to every living parent, that until woman shall be made the chief teacher and *former of the infant mind*, man's progress towards perfection will, as hitherto, continue slow in progress. If by woman sin came into the world, I proclaim that by woman, chiefly, can it be driven out.

I would call her the "*former*" of the infant mind, and if she but do that duty as no other human being can do it, we shall have no need of the distracting and peace-disturbing efforts of the modern *Reformer*. Then would the *love* commanded by our Saviour, and the *charity* described by St. Paul fill men's hearts with good will to one another, and each of us would ever strive to bless his neighbor rather than himself—for in truth men's chief blessing, and truest happiness can best be found in blessing one another.

I have no doubt, but, that every child born with a sound mind may, by proper mental and physical treatment, *from the day of birth*, be grown up to be a gentle, a benevolent, and a pious adult. And if every adult found his happiness to consist in blessing his neighbour, rather than by any other means in this world, would there not soon be, comparatively, an end of criminal legislation, and of armies, police, and of the countless numbers heretofore employed to restrain the vices and to punish the crimes of our hitherto ill-trained and, therefore, unhappy Race.

If this great truth were once but firmly believed by all, and universally acted upon, the hope of a millennium would be no longer classed among the phantoms of visionary men. The mere belief would encourage parents and nurses to redouble their efforts in the training and management of children.

Let us all, now, admit this as truth. THE BELIEF IN IT CAN LEAD TO GOOD ONLY, AND TO GOOD CONTINUALLY. THERE CAN NO HARM GROW OUT OF THIS BELIEF. Let the Clergy, above all men, inculcate this doctrine among their parishioners. Above all men they have the most power to do good. Above all men can they become the best benefactors of their people.

A FATHER.

MISCELLANY.

Phrenology in Connecticut.—We gladly open our columns to the following excellent communication from our cordial co-worker in the cause of science and of man, Nelson Sizer. Its suggestions touching the dissemination of Phrenology in small places, are truly excellent, and accord with our own experience. We hope he will write often for our Journal.

Those casts we will examine soon now. So completely has our energies been taxed to accelerate the completion of Love and Parentage, (Amativeness,) that we could not, in justice to justly complaining subscribers, attend to *uny* thing till this most onerous task, now so nearly finished, was completed. We have delayed only to *perfect.*

Phrenology in Connecticut.—O. S. Fowler, Esq.: Dear Sir,—I often feel a desire to communicate to you, for the Journal, such thoughts and facts as are constantly transpiring in my peregrinations and intercourse with the good people of my adopted state, but prizing the columns of the Journal as I do, I fear that any thing from me might occupy space which ought to be filled by an abler head and pen. But I read with great interest the correspondence of our brethren in the Phrenological field, and wish we might exchange thoughts, compare notes, and communicate suggestions, through the Journal, relative to the most thorough and successful modes of conducting lectures and bringing our favorite science before the people. There are many worthy men in the field of labor, with whom I should be happy to form an acquaintance through your pages, and there are a *few* who only scatter *tares*, and prejudice the public mind against those who are worthy, and against the science itself. It is always more difficult to reclaim the public mind from the prejudice imbibed from the operations of a mercenary and perhaps immoral Phrenological *tyro*, than it is to arouse an entire people to the truth, importance, and practical advantages of Phrenology. But we trust the day is past for ignorance, impudence, and sordid Acquisitiveness, to be sustained under the name of "*Phrenologist.*" The field is ample, "the harvest plenteous, and the laborers few," and all who love mankind, will gladly tender the right hand of fellowship to all who enter the field with sufficient learning and talent to command respect; with an honest purpose; with an ardent love for the honor and progress of Phrenology. and a philanthropy that embraces all mankind.

I spent the winter of 1841–'42, in the north part of Hartford County, associated with Mr. Buell, and we lectured in every town and village *by course*, and rarely visited a place to which we had not been previously invited. We were often urged to visit *small places* which a stranger would pass as being unworthy of attention, and unable to support a course of lectures, and in such places school houses were frequently abandoned for want of room, and churches substituted, and the entire population, including professional men, would listen to Phrenological truth with increasing interest, and liberally support, by voluntary donation, a course of twelve or sixteen lectures; and it was often remarked to us, that so large a collection of people had never been convened in the place, as were assembled at our lectures. In the spring and summer of 1842, we visited Massachusetts, Vermont, and New-Hampshire, some of the results of which are indicated by the addition of more than one hundred subscribers to the Journal.

In 1843, I took up a permanent residence in Connecticut, and formed a determination to confine my labors to this state, till every town and hamlet, and, if possible, every mind, should have been imbued with the renovating, philanthropic spirit of Phrenology.

During the last two years, I have lectured in every county in the state, but mainly in Hartford and New-Haven counties, and but for the necessity of suspending labour at short intervals to recruit my over-exercised energies, the glad sound of the science of human nature and human improvement, had been still more widely disseminated. It is not unfrequent, at the

close of a course of twelve lectures, to be invited to repeat them, or to give a second course, with which request I never fail to comply; and a more prompt support and general interest uniformly attend the *second* course. Few places there are which may not profitably be visited once a year, by one whose lectures are never repeated *verbatim*, especially if he keep pace with the progress of the science.

Phrenological lecturers, in too many instances, it is believed, have not managed judiciously for the interests of Phrenology, or even of their own. They have stopped but a day or two in a place; charged pay at the door; visited none at all among the people; taken no letters of introduction from clergymen and other influential men in one place, to those in another; passed *three* places in succession where they have stopped in *one;* thus forming no chain of influence in community, and the sum total of their influence has been about as much, and about as lasting, as the shadow of the passing, *rainless* cloud. It is often with difficulty, that I can learn the *name* of such men, six months after their visits. How much would be the influence of gospel teaching or literary instruction, conducted in a similar manner? I wonder that Phrenology has taken even so much root as it has done. But a brighter day is dawning. Lectures and books are sought with avidity, and fathers and mothers, "young men and maidens" are learning to examine heads; to think and reason upon their owa mental nature and physical structure; to govern families, and conduct social intercourse and form connubial relations, with reference to, and in the light of, Phrenology. Husbands and wives, having quarrelled and separated, being "unequally yoked," or, from the unrestrained indulgence of antagonist faculties, have applied to me for examination and advice, which has subsequently been adopted, and they now rejoice under the fragrant foliage of the domestic olive-branch. I have rode for miles among mountains and storms, with some young man or widower, to examine the head of his prospective wife; and the modest maiden, with moistened eye and throbbing heart, has solicited advice relative to the propriety and safety of an union with some of the sterner sex, whose head she knew I had examined; and in all such cases, I have summoned moral courage, sufficient to give *adverse* counsel whenever it was deemed necessary. The day is not distant, when so much light, and *practical* phrenological knowledge, shall be possessed by many, as shall enable them to examine and decide correctly for themselves, of the *real qualities* of those whom they may desire to marry; when the solid qualities of mental character shall be regarded as paramount, and *fancy* be made to take a subordinate position; when mankind shall learn to rely, and *safely* too, on that sure index of character and disposition, which nature has kindly engraved on the HEAD. Husbands and wives are beginning to regulate their connubial habits, and settle their disputes and correct their defects; or, to find a happy solution to the problem of their domestic peace, *by the aid of phrenology.* I know many, *very many* families in this, and other states, who have modelled their family government after the phrenological pattern, and date their first correct principles and practice to our humble efforts in the lecture room.

Nothing in this state (and the same may be said of all the New-England states,) calls out and retains such large audiences as phrenological lectures, and we are not wholly dependent for an audience upon the second and third classes of community; but the first families and best informed, cling to the subject even more eagerly than the illiterate and unthinking mass; the former sceptic listens, ponders, and believes; and the declaration, "*I don't believe Phrenology,*" is rarely heard. Many believe it in theory, but

ask for the *cui bono*, and if the lecturer can present it fairly, our utilitarian people seize it with as much avidity, as they are said to do of a good bargain.

Phrenology is paving its way to the principles and practices of the people of Connecticut. Formerly, as you well know, many clergymen and other pious persons feared the influence and tendency of the science; but within the last year, in this state, ministers have from the pulpit on the Sabbath, and at their evening lectures, illustrated the nature of man, and urged upon the people the claims of the gospel by the doctrines of the science, and employed phrenological terms, and made direct reference to the course of lectures then in pregress. Rejoice with me, my dear brother, that ministers of religion are beginning to study the Theology of Nature in connexion with that of Revelation, and that, to the hungry nature of man may soon be opened, the entire granary of truth. Would all the clergy study and adopt the *true science of mind*, they might then teach with the authority of a Divine command; because man's consciousness and every sentiment and mental power *must* yield to the *pure*—the *whole truth*. It is just as impossible for human nature, when *properly* addressed, to remain unmoved, as it is for a perfect piano-forte to refuse its harmonious tones, when its keys are touched by a master's hand. Yours, truly,

Avon, Ct., Oct. 15th, 1845. NELSON SIZER.

Phrenology in Bolton, Mass.—When those who are accustomed to control mind, give Phrenology their sanction, its progress is greatly accelerated thereby, but retarded by their opposition. Phrenology is by no means dependent on their support. It is true, and will prevail, yet will triumph sooner if they sanction. One of the best "signs of the times in the Phrenological horizon, is the great number of *ministers* who give Phrenology their support. They hold the keys of mind and public sentiment. They should. The great lever of mind is the moral faculties. Yet they should mind how they use this lever. Phrenology puts moral sentiment at the fountain head of mind. Phrenology must be introduced by means of its power over mind. It is therefore most gratifying to see those who hold these keys, open the doors of mind to the reception of Phrenology.

The following resolutions, moved by a minister, were passed in favor of L. N. Fowler's lectures on Phrenology at Bolton. Of his brother's capability as a Phrenologist, it may not become the Editor to speak in terms as high as he really deserves. The public have spoken, and are daily prizing higher and higher, both the man and his invaluable labors.

"Last avening, at the close of Mr. Fowler's Lectures, the house was called to order by Rev. Mr. Edes, who requested the audience to remain after Mr. Fowler had left the house. Col. Caleb Wheeler being chosen Moderator, took the chair and called the house to order; after which Dr. John L. S. Thompson was chosen Secretary, and Rev. Richard Edes, John E. Fry, Esq., and Col. A. Holman, Committee; who retiring, in a few minutes submitted the following resolutions, &c., viz:—

At a meeting of the citizens of Bolton, held at the close of a course of

Phrenological and Physiological Lectures by Mr. L. N. Fowler, the following resolutions were unanimously adopted:

Resolved, That we have listened to a course of Phrenological and Physiological Lectures by Mr. L. N. Fowler, of New-York, with great interest and pleasure, and we trust with improvement.

Resolved, That Mr. Fowler leaves this place with our gratitude for his services, our best wishes for the happiness of himself and his amiable lady, and his associate in business—also, for the success of those sciences, upon which so much in morals, so much in religion, and so much in general happiness evidently depends.

Resolved, That the Secretary be instructed to hand a copy of the above resolutions to Mr. Fowler. JOHN L. S. THOMPSON, Sec'ry."

UTICA, Sept. 1845.

MR. FOWLER:—The following is a copy of a letter from a zealous friend of Phrenology; the whole, or any part of which is at your disposal.

Varysburgh, Wyoming Co., N. Y., 1845.

MR. E. H. SANDFORD—Sir: I send you the following FACT in support of Phrenology; which (if worthy) you may use in any way you may think proper.

Some time in the month of February, 1844, in the village of Tecumseh, Mich., I became acquainted with a Mr. L——, who had, while residing in that place for one year, maintained the reputation of a worthy and respectable citizen. However, on observing his head, I discovered something striking in the development of his faculties, and, upon a closer examination, found that his head sloped directly from Firmness to Cautiousness, showing a DECIDED deficiency of Conscientiousness. His head was wide in the region of Acquisitiveness, Secretiveness and Destructiveness, with a large development at the CEREBELLUM, (Amativeness;) when, from the confidence I reposed in Phrenology, I announced to persons of my acquaintance, (who were knowing the fact of his paying his addresses to a very respectable lady of that village,) that he was a person of low immoral feelings. They remonstrated, and declared that he bore an unblemished character, and denounced the science which led me to my unhesitating conclusion.

When I saw him in May following, he was in the village of V——, Wy. Co., N. Y., where he made a contract to enter into the matrimonial relations with a young lady of respectability in that village. But while travelling through the County of Oswego, on inquiry, I ascertained that he had a wife and two children residing in the village of M——, Herkimer County. He left his family and fled to Canada, to evade an arrest, for forging a bank note of $1,000!

His wife, father, and mother, on being informed of his whereabouts, immediately repaired to the village of V——, Wy. Co., when the contemplated marriage ceremony was indefinitely postponed. Comment is unnecessary. Those who may read

Promote virtue by detecting wrong.

this isolated fact, are at liberty to draw their own inferences in regard to the importance of those principles which are ever steadfast to promote virtue by detecting wrong.

Yours, truly, H. B. MILLER."

I have availed myself of a few numbers of your valuable Journal, which speaks forth, as usual, the sentiments and principles of Phrenology, POINTEDLY and without reserve; and am well pleased with the reflection that it will continue to be sent out into the world, filled with new facts and replete with important information, condensed in a small compass, and expressed in FEW WORDS, which not only deserves a place in the library of every Phrenologist, but also in that of every believer in the science. And, indeed, those "HOME TRUTHS" should not fail to find their way to every fireside, and "come home" to every domestic circle. In closing these broken sentences, I have only to congratulate you upon your long-tried efforts, and your MANIFEST SENSE OF DUTY, in restoring the condition of society, and in exalting man to his proper dignity. I am, sir, yours in the cause of reform,

E. H. SANFORD.

FACTS always speaks for themselves, and are always welcome to the columns of this MATTER-OF-FACT Journal. We should be glad to hear from our friend Colby often.

WEST AMESBURY, July 24, 1845.

I send you the following phrenological fact; not because the science requires any additional proof, to establish the correctness of its principles, but on account of its peculiar character. Among the many phrenological facts which have fallen under my observation, demonstrating the order and location of the different cerebral organs, this I consider of peculiar interest.

During the summer of 1843, a friend of mine was attacked with a violent fever, which, for a time, so affected his brain as to render him delirious. Calling upon him frequently, I was struck with the manner in which his conversation, during his wanderings, changed from one species of mania to another. The first peculiarity which I noticed, was an idea that he was laboring at his usual occupation as a mechanic. During the greater part of the day he fancied himself laboring at his work, and no effort of his friends could convince him to the contrary. He also tried to sell his work, demanding the greatest price.

Upon visiting him a short time afterward, he said he had become so fatigued that he had left his work, and had been engaged in trapping birds. During my stay, which lasted half an hour, he talked incessantly of trapping birds, squirrels, &c. He also manifested a disposition to secrete all the small articles near him.

Upon visiting him a third time, I inquired after his success in catching birds. He replied, that he had since killed them all.

+Sp. case L. Hered. Des.

He showed quite a disposition to fight; said he had beat them all, and would whip me. His next manifestation was a state of fear; in which he fancied himself falling, drowning in water, &c. Calling a short time afterward, he said that his room had been thronged with females, but that they had then gone, and the room had since been filled with children, in such numbers, that their noise had completely disturbed him from all rest.

His state of mind thus showing an excitement of all the organs around the base of the brain, commencing at the organ of Constructiveness, and proceeding backward, through Acquisitiveness, Secretiveness, Destructiveness, Combativeness, Cautiousness, and Amativeness, in regular succession, to Philoprogenitiveness.

This effect was, probably, produced by inflammation, commencing at the forward part of the brain and extending backward, enveloping the convolutions one after another, like a cloud rising in the heavens, and spreading itself over one constellation after another until it covers the whole expanse. The time occupied was not far from three days. W. P. COLBY.

HEREDITARY DEFORMITY.—General Green in his "Mier Expedition," touches off the social peculiarities of the Mexican people with a free hand. He says the NINAS who sold the Texans "vino mascal," were perfectly astonished at the Anglo-American honesty. Soldiers, whether officers or not, who would not cheat and steal, were strange beings. After relating some astounding evidences of the moral and physical deterioration of the Indio-Spanish race, the General goes on to say:

"I saw families, a large portion of whom were blind, and one in particular, wretchedly deformed, without any other use of their legs than to crawl upon their all-fours with a kind of jumping gait, much resembling the motion of the mud turtle. These miserable creatures, who appeared as destitute of reason as of physical power, were huddled together in the most abject misery. There can be nothing more certain than that these diseases and infirmities are propagated. One instance came under my observation strikingly illustrative of this fact: it was in the person of one of the camp followers, a most unwise proportion of whom pursue the Mexican camp. He was a man apparently of about forty-fixe years of age, with a full-sized, well-proportioned head and body, but whose legs, from his hip joints to his feet, did not exceed one foot in length, and his arms were in proportion to the length of his legs, thus giving him the height of a boy of seven years of age. This little man was of the most enduring constitution, and would toddle after our regiment in a brisk run thirty miles per day. When the regiment would halt for the night, the little fellow would dance either for clacos or aguardiente, of both of which he was very fond. He told us that he had a very

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tall wife and eight children; that four of them took after their mother and had long legs, and four of them after himself and had short ones. Many other instances of lusus naturæ came under my observation, and I was informed that an alarming proportion of the population were afflicted with these wretched entailments."

BUCKWHEAT CAKES.—As the season approaches for the return of this luxurious article of diet, the Journal feels bound to administer a much needed caution concerning their use. The cakes themselves he does not absolutely condemn. They may even be healthy, though HOT wheaten-flour edibles it considers decidedly injurious. This rule MAY, and may NOT, hold good of the HOT buckwheat cakes, (hot INDIAN bread is not subject to this censure because hot,) but he is compelled to censure, and in the most decided terms, the MELTED BUTTER generally eaten with them. Now butter unmelted, is none the best, but MELTED butter is most DETRIMENTAL to the stomach. Few things are more indigestible. Hence provided, if the cakes themselves are harmless even when hot, yet putting, as most who love the article do, great quantities of BUTTER upon them while hot enough to melt it, CANNOT BUT sooner or later destroy the tone of the stomach, and induce disease. The Editor neither approves or condemns hot buckwheat cakes themselves, (though, let them get cold and then warm them over, and they are at least harmless, he thinks healthy, and certainly not unprofitable, notwithstanding that most persons throw away what is not eaten when hot,) yet he recommends MILK or CREAM in place of butter. Nor will this diminish aught from the palatableness of the luxury but rather enhance it, especially if loaf sugar be added, or good molasses. Far be it from the Editor to restrict gustalory pleasures which nature has so bountifully attached to eating. It is our DUTY to eat what TASTES good, provided it is not injurious. Nor would he thus interdict the use of butter, SO SEASONABLE an accompaniment, without furnishing a substitute equally palatable, and even more so. This proposed change, eating reader, will not diminish one jot from the relish of your dainty dish, but will even ENHANCE the gustalatory pleasures of your breakfast at the same time that it will render them harmless, at least comparatively. Many, too, who are now unable to eat them, by making this change, will not find them materially injurious, especially if they will eat those that have been WARMED over. COLD cakes, however are not recommended.

The Editor intends to examine this subject somewhat more fully, and if he finds anything additional worthy of special notice, he will communicate it. In the next volume of the Journal he intends to take up that most important subject, DIATETICS—on which he fancies he can throw not a little light.

PHONOGRAPHY.—The Journal has often expressed the full belief that great improvement would some day be made in the art of SPELLING AND WRITING. That the present system is miserably defective all will admit. That every letter SHOULD personate a sound, is equally evident, but that in our present system, this is NOT the case, but that the same letter often represents different sounds, and different sounds are often represented by the same letter or combination of letters, are plain matters of fact. That, in consequence, spelling would be easy if every sound had its character and every character its sound, is also evident, but that, as things now are, learning to read and spell correctly is exceedingly difficult, all admit, because all have EXPERIENCED this difficulty. Now cannot this bungling system of reading, spelling, and writing be made to give place to a system comparatively perfect. Cannot improvement (this being an AGE of improvement) reach this department of art as well as any other? If not, WHY not? And if so—if we can spell and write by the SOUND, and thus facilitate the communication of our IDEAS—surely no invention of the age could compare with this invention for the transmission of MIND. IN MIND ALONE, do we enjoy, exist; and to FACILITATE the communication of thought and feeling is to facilitate the highest object man can achieve. To simplify and shorten writing, so that we can put down word for word as it falls from a speaker's lips, and write almost as fast as we can think, not in blind characters that must be re-written before it can be deciphered, but so that the whole shall be fit for the press as it falls from the speaker's lips; and to simplify printing, so that we can put upon a given page twice or thrice the amount of thought we now can, and so put it that the reader can catch the sense without wading through mazes of lumbering words, but AT ONCE, and read several volumes to one now, and all better than now; thus reducing the price of MENTAL provender—these, reader, are ends the highest that can engage attention. The Journal cannot, therefore, look upon any thing that promises success in this most promising field of human progression but with the deepest interest, and is glad to convey to its readers any information upon so desirable a subject. Hence its copying of the above from the "Harbinger," partly for the information it affords of the WHEREABOUTS of such knowledge, and partly because of the explanation it contains of the MODUS OPERANDI of the art in question. Suffice it to add, that the Editor will embrace an opportunity to inform himself and his readers more fully concerning this promised improvement.

PHONOGRAPHY.—Our attention has been directed to this subject very lately, but long enough to interest us in it deeply. If we should express fully our views in relation to it, at the present time, we might, perhaps, pass for enthusiasts merely. The time rapidly approaches, however, we are confident, when no language

in praise of Phronology will appear extravagant, and an estimate of its importance to mankind exaggerated.

Phonography is the art of writing according to sound. It is an invention of Mr. Isaac Pitman, of Bath, England. Mr. Pitman is not the only discoverer of the principle of Phonetic Writing, but to him we are indebted for a complete and perfectly philosophical system of representation of the sounds of the human voice in speech. History affords many examples of an instinctive perception of the truth of the phonetic principle of writing, as it does of almost all principles, but Mr. Pitman, has the immortal honor, of being the first to apply it successfully, by adopting a natural system of representation of language. Although the phonetic principles has been recognized in all ages, and partially adopted by some of the most ancient nations, it has been so little understood and developed, as to be of little practical value; being scarcely elevated above the Hieroglyphic, the Ideologic and the Symbolic principles, as a means of representing thought and speech. This may appear a bold and unfounded statement, by those who have not examined critically into the subject, and who may suppose that they have been enjoying the blessings of a phonetic representation, in the present Roman alphabet. It is nevertheless true, as all will acknowledge, when they see the inperfection of our alphabet, and the falseness of English orthography thoroughly exposed.

Like the idea of Association, which in all times, has presented itself in some form or other, as an expression of the true order of human societies, the idea of a phonetie system of representation of human speech, has likewise been manifested in various ways, in the language of different nations, in all ages. And, as the truth of Association has, in the present age, been more powerfully and universally felt, and has developed itself in a greater number of minds than at any former period, so the truth of the phonetic principle has also been more deeply impressed on the minds of men; and has received a more frequent development. Many persons, moved by the idea of Association, and of Phonetic Writing, have attempted to reduce them to systems, and give them both a practical application. But all have failed until Fourier, by an analysis of the passions of the human soul, made of Association a science, and Pitman, by an analysis of the sounds of the human voice, has given to phonetics a philosophical foundation. Among the many persons, both in this country and in Europe, who have conceived the idea of the phonetic principle, and have attempted to give it a practical application, we may mention the name of that pre-eminently common-sense philosopher, Benjamin Franklin. He, in common with hundreds and thousands of others, observed the ridiculous absurdity of English orthography, and with the direct simplicity for which his mind was so remarkable, perceiving that the cause of the gross falseness of orthography, was the imperfection of the alphabet, undertook to reform the present system of orthography, by inventing a new

and more perfect alphabet. But pressing duties, in the stirring times in which he lived, called him off from this design, and it was never completed. A very interesting correspondence with a young lady who opposed his views of a reform of English orthography, from a pedantic pride in knowing well how to spell according to false orthography, will be found in his biography.

Pitman has gone beyond all others who have conceived the idea of phonetic representation, by analyzing and classifying all the sounds of the voice, as heard in speech, and giving to them natural representatives both for writing and printing.

The great principle of phonetic writing and printing, is, that one simple sign and character shall invariably represent one simple and elementary sound, and that one sound shall invariably be represented by one sign. The violation of this principle, is the fundamental error which leads to the confusion and monstrous absurdities that exist in the orthography of the English, and more or less, of all other languages, rendering the whole written and printed languages, ONE GREAT UNTRUTH. All the difficulty of learning to read and write, and mastering foreign languages, consists in overcoming the barbarous absurdities of false orthography. With a true system of representation, to learn to read and write, is the simplest and easiest thing in the world.

In the English language there are about forty sounds, which are represented or rather misrepresented, by twenty-six letters. Twenty-six letters cannot represent forty sounds, the consequence of which is, that the same letter has been used for various sounds, and to add to the confusion, various combinations of letters are used for the SAME sounds, and the same combinations for VARIOUS sounds, while at the same time the letters are sometimes sounded and sometimes not. For instance, the letter A is pronounced one way in FATE, another FAT, another in FALL, another in FARCE, and in other words it has still other sounds. The combination OUGH, has seven different sounds in the words, cough, tough, plough, through, though, hiccough, and lough, (a lake.) We have the same sound in the different combinations rain, rein, reign, lane, plain, whey, &c. These absurdities in the simplest words, are so obvious that they need no comment. They run through the whole language, and are multiplied infinately, by ridiculous anomalies in the use of every letter in the alphabet. No wonder that it should be said, "the only rules of the English language are its exceptions," and that such a mass of contradictions can scarcely ever be conquered by foreigners, and that children have to waste the best of their time in learning to read, write and spell their native tongue,

Mr. Pitman has given us the means of demolishing all this mighty fabric of falsehood at a blow, and we look forward with the greatest satisfaction to the speedy downfall of Babel, and the erection of the temple of Truth in its stead.

For writing, Mr. Pitman has adopted the simplest geometrical

signs—a sign for every sound—in lieu of our complex script character, by which means, we are enabled to write six times as expeditiously as we can by the present method of writing, and in a style that is at once concise, simple and beautiful. All, and more than the rapidity of the best system of stenography, is attained, whilst the writing is perfectly legible, more legible in fact than our old long hand is to the most practiced eye. Thought can be conveyed to paper almost as swiftly as it flashes through the brain, and as the torrent of eloquence flows from the orator's lips, every word can be arrested and preserved. Wonderful and glorious art! Even in this age of magnificent discoveries it stands pre-eminent. What a grand perspective it opens to the speculative mind, of mighty and beneficient results!

Mr. Pitman has been engaged in the dissemination and perfecting of his system of phonetic writing and printing, now some seven or eight years, and the progress which it has made, and is making, is very great, but not at all astonishing, when the subject is understood. It is a common sense, practical thing, which convinces every mind of its truth, and commands favor as soon as it is explained. It is estimated that there are already more than twenty thousand Phonographers in England, and that during the year 1844, more than two hundred thousand letters in Phonography passed through the English Post Office. Corresponding societies have been formed, and one already numbers nearly or quite a thousand members. All classes of men are turning their attention to it, and studying it with an ardent enthusiasm. Four monthly magazines are published in the Phonographic and Phonotypic characters.*

Phonography has been introduced into this country recently by Messrs. Andrews and Boyle, of Boston, and the success attending their efforts to spread the science has been very great. We understand that in every state of the Union these gentlemen have correspondents in Phonography, the most of whom are persons who have taught themselves with the aid of elementary works, so simple and easy of acquirement is the beautiful system of writing. Messrs. Andrews and Boyle have taught and are teaching large classes in Boston. Exhibitions which they have given of the progress of their pupils, at the Tremont Temple, have been very conclusive tests of the merits of Phonography. Highly respectable audiences expressed by their applause the greatest pleasure at the explanations of the principles, and the practical illustrations which they saw and heard.

We earnestly hope that it will not be long before every man, woman and child, will be made acquainted with Phonography, and the old laborious method of writing be entirely suspended.

* And the first number of a handsome quarto newspaper printed in the Phonographic characters, by the Anastatic process, has just been received by the steamer Caledonia.